

**AMENDMENTS TO THE CLAIMS**

Please amend the claims as follows in accordance with the listing of claims set forth below.

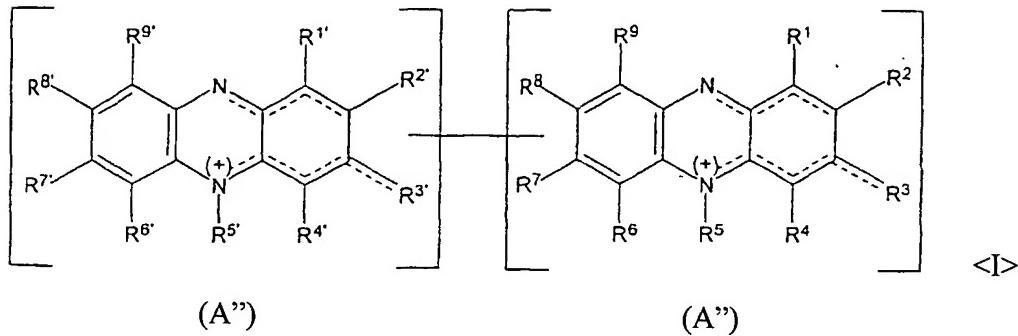
This listing of claims will replace all prior versions, and listings, of all claims in the application.

**LISTING OF THE CLAIMS**

Claim : 1. (Currently amended) A mixture of oligomeric phenazinium compounds, containing at least one phenazinium compound selected from the group consisting of

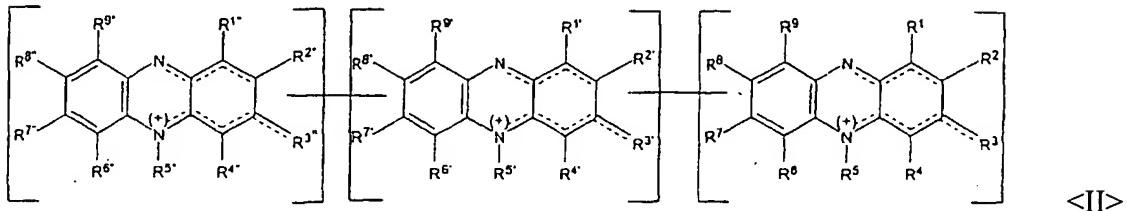
a) compounds containing two monomeric units having the following general chemical formula

< I > :

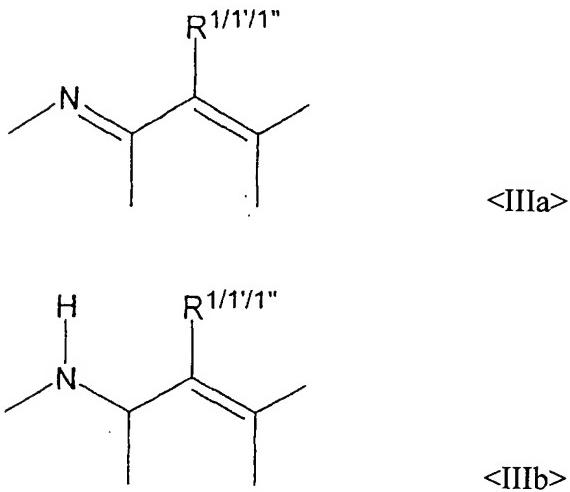


and

b) compounds containing three monomeric units having the following general chemical formula < II > :



as well as further oligomeric phenazinium compounds, wherein, in the aforementioned general chemical formulae < I > and < II >, the structure unit  $N(R^{5/5''})CC(R^{4/4''})C(R^{3/3''})$  has one of the general chemical formulae < IIIa > or < IIIb > :

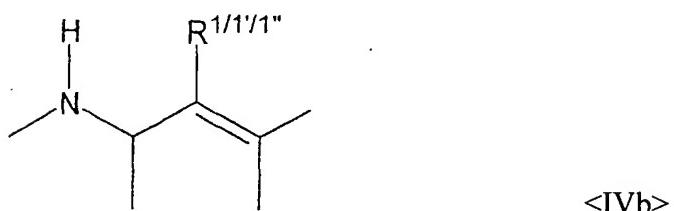
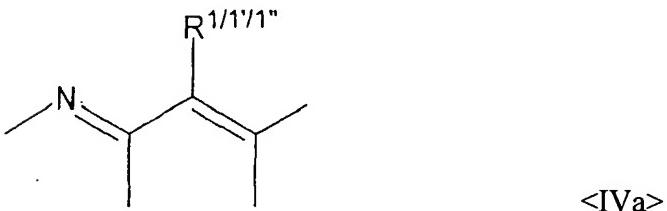


wherein further

$R^1, R^2, R^3, R^4, R^6, R^7, R^8, R^9, R^{1'}, R^{2'}, R^{3'}, R^{4'}, R^{6'}, R^{7'}, R^{8'}, R^{9'}, R^{1''}, R^{2''}, R^{3''}, R^{4''}, R^{6''}, R^{7''}, R^{8''}$  and  $R^{9''}$  have each independently one of the meanings selected from the group consisting of hydrogen, halogen, amino, OH, CN, SCN, SH, COOH, COO salt, COO ester, lower alkyl, aryl and heteroaryl as well as a single bond that links the individual monomeric units together,  $R^5, R^{5'}$  and  $R^{5''}$  denote each independently the same as  $R^1, R^2, R^3, R^4, R^6, R^7, R^8, R^9, R^{1'}, R^{2'}, R^{3'}, R^{4'}, R^{6'}, R^{7'}, R^{8'}, R^{9'}, R^{1''}, R^{2''}, R^{3''}, R^{4''}, R^{6''}, R^{7''}, R^{8''}$  and  $R^{9''}$  with the proviso that they do not represent a single bond,

$R^2, R^{2'}, R^{2''}, R^3, R^{3'},$  and  $R^{3''}$ , may additionally be selected from the group comprising oxo, imino and methylene with the proviso that a monomeric unit substituted by oxo, imino or methylene comprises the structure unit  $N(R^{5/5'})CC(R^{4/4'})C(R^{3/3'})$  of the general chemical formula <

IIIb > , wherein further, if  $R^2, R^{2'}, R^{2''}, R^3, R^{3'}, R^{3''}$  and  $R^{3''}$  are not oxo, imino or methylene, the structure unit  $NCC(R^{1/1/1''})C(R^{2/2/2''})$  has one of the following general chemical formulae < IVa > or < IVb >



wherein further A is an acid anion and

wherein further all of the oligomeric phenazinium compounds having the general chemical formulae < I > and < II > are contained in the mixture in an amount of at least about 80 mol-%.

Claim 2. (Currently amended) The mixture of oligomeric phenazinium compounds according to claim 1, wherein at least one of the residues selected from the group comprising  $R^2, R^{2'}, R^{2''}, R^3, R^{3'} R^{3''}, R^7, R^{7'}, R^{7''}, R^8, R^{8'}$  and  $R^{8''}$  has one of the meanings selected from the group consisting of halogen and hydroxy.

Claim 3. (Currently amended) The mixture of oligomeric phenazinium compounds according to claim 1 ~~one of the preceding claims~~, wherein at least one of the residues selected

from the group comprising  $R^2$ ,  $R^3$ ,  $R^7$  and  $R^8$ " in the oligomeric phenazinium compounds according to the general chemical formula < II > has one of the meanings selected from the group ~~comprising~~ consisting of halogen and hydroxy.

Claim 4. (Currently amended) The mixture of oligomeric phenazinium compounds according to ~~one of the preceding claims~~ claim 1, wherein at least one of the residues selected from the group ~~comprising~~ consisting of  $R^2$ ,  $R^2'$  and  $R^2''$  represents lower alkyl.

Claim 5. (Original) The mixture of oligomeric phenazinium compounds according to claim 4, wherein lower alkyl is methyl or ethyl.

Claim 6. (Currently amended) The mixture of oligomeric phenazinium compounds according to ~~one of the preceding claims~~ claim 1, wherein at least one of the residues selected from the group ~~comprising~~ consisting of  $R^7$ ,  $R^{7'}$ ,  $R^{7''}$  represents an alkylated amine.

Claim 7. (Currently Amended) The mixture of oligomeric phenazinium compounds according to claim 6, wherein the alkylated amine is selected from the group ~~comprising~~ consisting of N- methylamine, N-ethylamine, N, N-dimethylamine and N, N-diethylamine.

Claim 8. (Currently Amended) The mixture of oligomeric phenazinium compounds according to ~~one of the preceding claims~~ claim 1, wherein at least one of the residues selected from the group ~~comprising~~ consisting of  $R^5$ ,  $R^{5'}$  and  $R^{5''}$  represents methyl or an aryl group.

Claim 9. (Original) The mixture of oligomeric phenazinium compounds according to claim 8, wherein the aryl group is phenyl or tolyl.

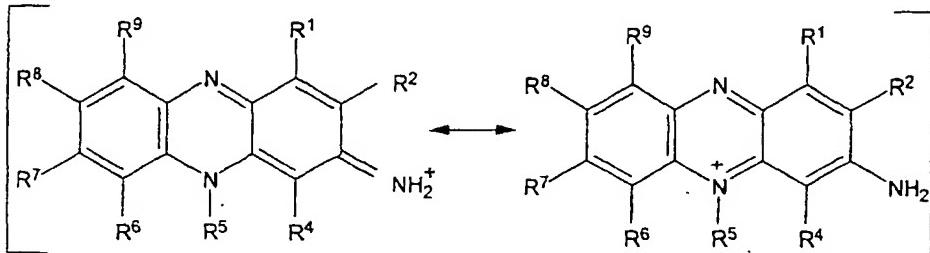
Claim 10. (Currently Amended) The mixture of oligomeric phenazinium compounds according to one of the preceding claims, wherein the acid anion A is selected from the group comprising sulfate, hydrogen sulfate, halide, tetrafluoroborate, hexafluorophosphate, nitrate,

acetate, trifluoroacetate and methanesulfonate.

Claim 11. (Currently Amended) The mixture of oligomeric phenazinium compounds according to ~~one of the preceding claims~~ claim 1, wherein the monomeric units in the compounds are selected from the group ~~comprising~~ consisting of

- a) 7-N,N-dimethylamino-3-hydroxy-2-methyl-5-phenyl-phenazinium
- b) 3-chlorine-7-N,N-dimethylamino-5-phenyl-phenazinium
- c) 8-dimethylamino-10-phenyl-10H-phenazine-2-one
- d) 2-N,N-dimethylamino-10-phenyl-5,10-dihydrophenazine
- e) 3-N-ethylamino-7-hydroxy-5-phenyl-phenazinium
- f) 3-chlorine-7-N-ethylamino-5-phenyl-phenazinium
- g) 3-methyl-8-N-methylamino-10-phenyl-10H-phenazine-2-one
- h) 7-N-methylamino-2-methyl-5-phenyl-5,10-dihydrophenazine

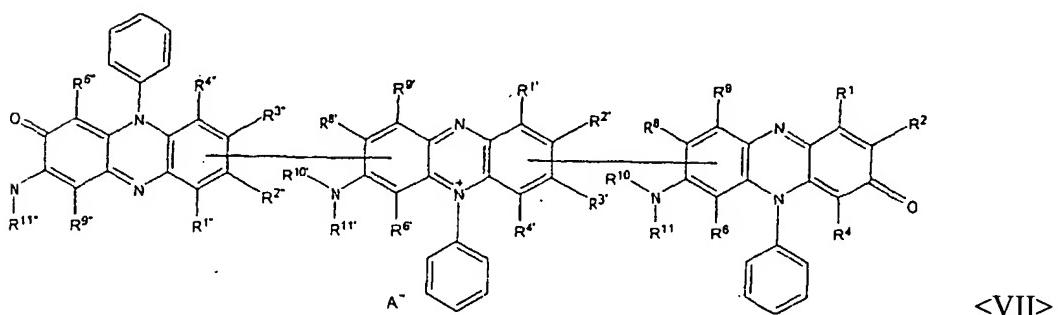
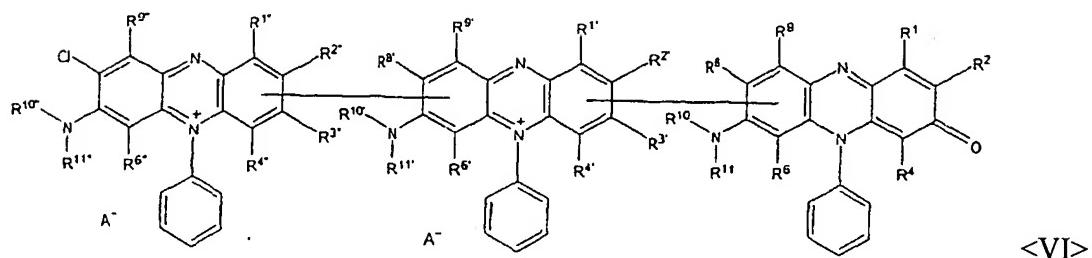
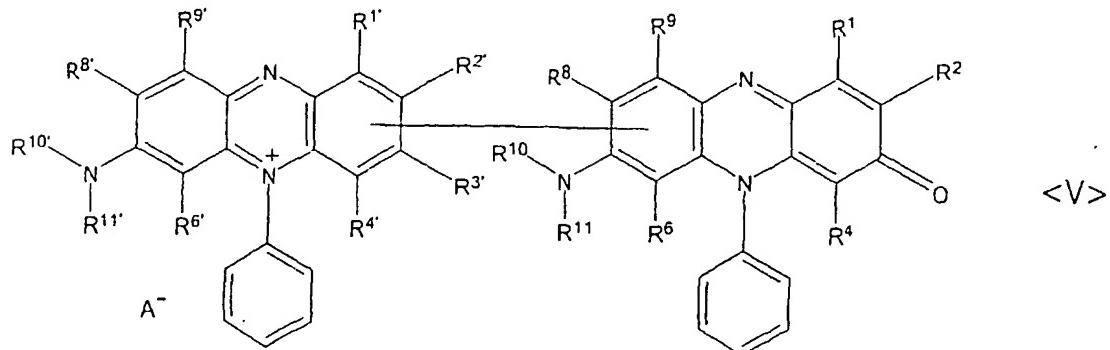
Claim 12. (Currently amended) The mixture of oligomeric phenazinium compounds according to ~~one of the preceding claims~~ claim 1, wherein the mixture is produced by diazotation of at least one monomeric phenazinium compound of the following general chemical formula <IX> :

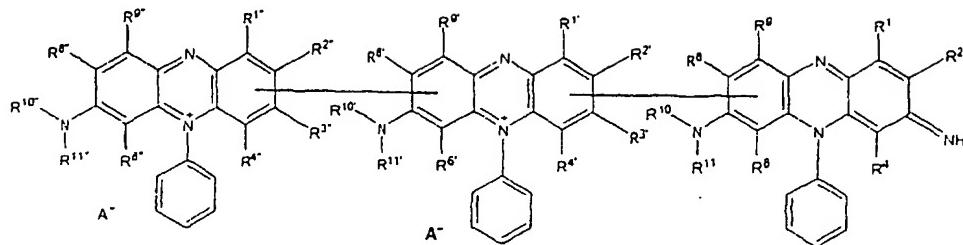


wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup> and R<sup>9</sup> have the same meanings as given before

and by reacting the resulting diazonium compounds in a one-pot reaction to form the oligomeric phenazinium compounds.

Claim 13. (Currently amended) The mixture of oligomeric phenazinium compounds according to ~~one of the preceding claims~~ claim 1, wherein the compounds have chemical formulae selected from the group comprising consisting of:





wherein  $R^1, R^2, R^4, R^6, R^8, R^9, R^{11}, R^{22}, R^{33}, R^{44}, R^{66}, R^{88}, R^{99}, R^{111}, R^{222}, R^{333}, R^{444}, R^{666}, R^{888}$  and  $R^9$  have the above mentioned meanings and wherein  $R^{10}, R^{11}, R^{10'}, R^{11'}, R^{10''}, R^{11''}$  represent hydrogen or lower alkyl.

Claim 14. (Currently amended) The mixture of oligomeric phenazinium compounds according to ~~one of the preceding claims~~ claim 1, wherein they are selected from the group comprising:

- i. 3'-N,N-dimethylamino-3, 8'-dimethyl-8- (N-methylamino)-7'-oxo-10,5'-diphenyl-5',7'-dihydro-[2, 2'] biphenazinyl-10-ium-chloride
- ii. 3,8',8"-trimethyl-8, 3',3"-tris- (N-methylamino)-7"-oxo-10, 5', 5"-triphenyl-5', 10', 5",7"-tetrahydro- [2, 2' ; 7', 2"] [2,2'] biphenazinyl-6,10'-ium-sulfate
- iii. 8,3'-bis-(N,N-dimethylamino)-8'-methyl-7'-oxo10,5-diphenyl-5',7'-dihydro-[2,2']biphenazinyl-10-ium-hydrogen sulfate
- iv. 8,8'-bis-(N,N-dimethylamino)-8,3'-dimethyl-5,10'-diphenyl-7-hydroxy-[2,2'] biphenazinyl-10,10'-ium-tetrafluoroborate
- v. 8,8'-bis-(N,N-dimethylamino)-10,10'-diphenyl-3-methyl-[2,2']biphenazinyl-10,10'-ium-tetrafluoroborate
- vi. 3,8'-bis-(N,N-dimethylamino)-8,3'-dimethyl-5,10'-diphenyl-7-hydroxy-[2,2']biphenazinyl-5,10'-ium-tetrafluoroborate

- vii. 3,8'-bis-(N,N-dimethylamino)-8,3'-dimethyl-5,10'-diphenyl-7-hydroxy-[2,2']biphenazinyl-5,10'-ium-chloride
- viii. 3,8',8"-tris-(N,N-dimethylamino)-8-methyl-5,10',10"-triphenyl-[2,2';7'2"]terphenazine-5,10',10"-ium-tetrafluoroborate
- ix. 8'-N,N-diethylamino-8-N,N-dimethylamino-3-3methyl-10,10'-diphenyl-[2,2']biphenazinyl-10,10'-ium-sulfate
- x. 8'-N,N-diethylamino-3-N,N-dimethylamino-7-hydroxy-8-methyl-5,10'-diphenyl-[2,2']biphenazinyl-6,10'-ium-sulfate
- xi. 8,3',3"-tris-(N,N-dimethylamino)-7"-oxo-10,5',5"-triphenyl-5',10',5"7"-tetrahydro-[2,2';7'2"]terphenazine-10-ium-hydrogen sulfate
- xii. 3,8'-bis-(N,N-diethylamino)-7-hydroxy-5,10'-diphenyl-[2,2']biphenazinyl-6,10'-ium-sulfate
- xiii. 7-chlorine-3,8'-bis-(N,N-dimethylamino)-5,10'-diphenyl-8-methyl-[2,2']biphenazinyl-5,10'-ium-chloride
- xiv. 7-chlorine-3, 8'-bis-(N,N-dimethylamino)-8,3'-dimethyl-5,10'-diphenyl- [2,2']biphenazinyl-5,10'-ium-chloride
- xv. 7-chlorine-3,8'-bis-(N,N-dimethylamino)-5,10'-diphenyl- [2,2']biphenazinyl-5, 10'-ium-chloride
- xvi. 7-chlorine-3, 8',8"-tris- (N, N-dimethylamino)-8, 3'-dimethyl-5, 10', 10"-triphenyl-[2, 2' ; 7', 2"] terphenazinyl-5,10',10"-ium-chloride
- xvii. 7-chlorine-8,1'-dimethyl-8'-N,N-dimethylamino-5,10'-diphenyl-[2,2']biphenazinyl-5,10'-ium-chloride

xviii. 8,8'-bis-(N,N-dimethylamino)-10,10'-dimethyl-[2,2']biphenazinyl-10,10'-ium-hydrogen sulfate

xix. 8,3',3''-tris-(N,N-dimethylamino)-7''-oxo10,5',5''-triphenyl-5'',7''-dihydro-[2,2';7'2'']terphenazine-10,5'-ium-hydrogen sulfate

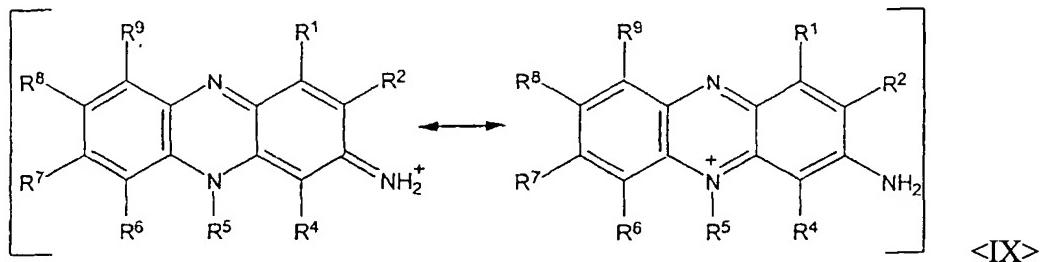
xx. 8,3'3''-tris-(N,N-dimethylamino)-8-methyl-5,10',10''-triphenyl-[2,2',7'2'']terphenazine-5,10',10''-ium-tetrafluoroborate

xxi. 8,8'-bis(N,N-dimethylamino)-10,10'-diphenyl-[2,2']biphenazinyl-10,10'-ium-tetrafluoroborate

xxii. 8,8'-bis-(N-methylamino)-3-chlorine-10,10'-diphenyl-[2,2']biphenazinyl-10,10'-ium-chloride

xxiii. 3,3',3''-tris-(N-methylamino)-8''-chlorine-5,5',5''-triphenyl-[8,2';8,7'']terphenazine-5,5',5''-ium-chloride.

Claim 15. (Currently amended) A method of preparing the mixture of oligomeric phenzinium compounds according to ~~one of the preceding claims~~ claim 1, wherein at least one monmeric phenazinium compound of the following general chemical formula <IX>:



wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup> and R<sup>9</sup> have the same meanings as given before,  
is diazoted and the diazonium compounds formed in the diazotation reaction are reacted  
to the mixture of oligomeric phenazinium compounds in a one-pot reaction.

Claim 16. (Currently amended) The method according to claim 15, wherein the monomeric phenazinium compounds of the general chemical formula <IX> are selected from the group ~~comprising~~ consisting of safranine dyestuffs in which R<sup>1</sup>, R<sup>4</sup>, R<sup>6</sup> and R<sup>9</sup> each represent hydrogen, R<sup>5</sup> represents phenyl and R<sup>7</sup> represents NR<sup>10</sup> R<sup>11</sup>, wherein R<sup>10</sup> and R<sup>11</sup> each independently have one the aforementioned meanings.

Claim 17. (Currently amended) The method according to ~~one of claims 15 and 16~~ claim 15, wherein

- a) the safranine or the mixture of safranines is suspended in mineral acid and
- b) a nitrite or nitrosyl sulfuric acid is added to the suspension of the safranine or the mixture of safranines in the mineral acid at a temperature of at least 15 C.

Claim 18. (Currently amended) The method according to claim 17, wherein the mineral acid is selected from the group ~~comprising~~ consisting of hydrochloric acid, sulfuric acid, tetrafluoroboric acid, hexafluorophosphoric acid, phosphoric acid, hydrobromic acid and the mixtures thereof.

Claim 19. (Currently amended) The method according to ~~one of claims 15-18~~ claim 15, wherein the resulting diazonium compounds are reacted to form the mixture of oligomeric phenazinium compounds in the presence of a catalyst made of metal, selected from the group ~~comprising~~ consisting of copper, nickel, palladium and iron or of compounds of these metals, or of compounds selected from the group ~~comprising~~ consisting of alkali xanthogenates, alkali thiocyanates and alkali selenocyanates.

Claim 20. (Currently amended) The method according to claim 19, wherein the metal compounds are selected from the group ~~comprising~~ consisting of oxides, halides and

pseudohalides of the metals.

Claim 21. (Currently amended) The method according to ~~one of claims 19 and 20~~ claim 19, wherein the catalyst is in the form of a powder.

Claim 22. (Currently amended) An acidic bath for electrolytically depositing a copper deposit, said acidic bath containing oligomeric phenazinium compounds, wherein the oligomeric phenazinium compounds are contained in the form of the mixture according to claim 1 ~~one of claims 1-14~~.

Claim 23. (Original) The acidic bath according to claim 22, wherein the mixture of the oligomeric phenazinium compounds is contained in a concentration of 0. 00005-0. 1g/l.

Claim 24. (Currently amended) The acidic bath according to ~~one of claims 22 and 23~~ claim 22, wherein it additionally contains compounds selected from the group ~~comprising~~ consisting of nitrogen containing sulfur compounds and polymeric nitrogen compounds.

Claim 25. (Original) The acidic bath according to claim 24, wherein the concentration of the nitrogen containing sulfur compounds and the polymeric nitrogen compounds contained together in the bath is 0.0001-0. 50g/l.

Claim 26. (Currently amended) A method of electrolytically depositing a copper deposit by which a workpiece and an anode are contacted with a bath containing copper ions and the mixture according to ~~one of claims 1-14~~ claim 1, and a flow of electric current is generated between the workpiece and the anode.

Claim 27. (Currently amended) Use of the The method according to claim 26 including the step of producing decorative surfaces by ~~for~~ depositing a highly bright, leveled copper deposit ~~for the purpose of producing decorative surfaces~~.

Claim 28. (Currently amended) ~~Use of the~~ The method according to claim 26 for including forming a copper deposit on printed circuit boards provided with blind microvias.

Claim 29. (Currently amended) ~~Use of the~~ The method according to claim 26 for including forming a copper deposit on semiconductor substrates provided with high aspect-ratio recesses.

Claim 30. (New) The mixture of oligomeric phenazinium compounds according to claim 2, wherein at least one of the residues selected from the group consisting of R<sup>2</sup>, R<sup>3</sup>, R<sup>7</sup> and R<sup>8</sup> in the oligomeric phenazinium compounds according to the general chemical formula < II > has one of the meanings selected from the group consisting of halogen and hydroxy.